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Coronary Artery Dissection Following Chest Trauma

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ABSTRACT

Chest trauma has a high rate of mortality. Coronary dissection causing myocardial infarction (MI) following blunt chest trauma is rare. We describe the case of an anterior MI following blunt chest trauma. A 39-year-old male was received in our hospital following a motorcycle accident. The patient was asymptomatic before the accident. The patient underwent craniotomy for evacuation of hematoma. He developed severe chest pain and an electrocardiogram (ECG) revealed anterior ST segment elevation following surgery. Acute coronary event was medically managed; subsequently, coronary angiogram was performed that showed dissection in the left anterior coronary artery, which was stented.

Key words: Chest trauma, coronary dissection, stent

CASE REPORT

A 39-year-old male, who met with a road traffic accident, was received in our hospital. He was asymptomatic and without any comorbidities before the accident. He was diagnosed to have subdural hematoma and for which he underwent craniotomy. He had severe chest pain 6 h after the surgery and the electrocardiogram (ECG) showed anterior wall myocardial infarction (MI) and echocardiography showed regional wall motion abnormality in the left anterior descending artery (LAD) territory. Because the patient underwent surgery and contraindication for thrombolytics and antiplatelet, the patient was managed medically. Subsequently, 3 weeks later, the patient was taken up for coronary angiogram. Coronary angiogram revealed dissection in the proximal LAD that was stented with drug-eluting stent. The patient was discharged in a stable condition.

DISCUSSION

Chest trauma is known to cause cardiac contusion; however, acute MI is a rare complication of it. It can occur following blunt

chest trauma, secondary to coronary artery dissection, spasm of the coronary artery, intimal tear, subintimal hemorrhage, aneurysm intraluminal thrombosis and vessel rupture and external compression by epicardial hematoma, and hemorrhage into a preexisting atheromatous plaque.^[1]

The most common affected artery is the LAD due to its proximity to the chest wall. A relative weakness to the forces that accelerate and decelerate at the junction of the proximal and middle LAD could additionally explain the higher incidence of injuries to this vessel.^[2] The second most commonly affected artery is the right coronary artery; it is vulnerable because it runs anteriorly toward the sternum during systole and is affected by rapid deceleration, resulting in disruption of its junction from the aortic root.^[3] The left circumflex artery involvement is uncommon. Our patient had a dissection of the LAD.

Early identification remains a challenge. Diagnosis can be difficult because chest pain can be due to chest contusion or could be overshadowed by concomitant injuries.^[4] Initial evaluation should be oriented to stabilization according to standard protocol. Our patient was managed medically as he underwent craniotomy. After initial medical stabilization

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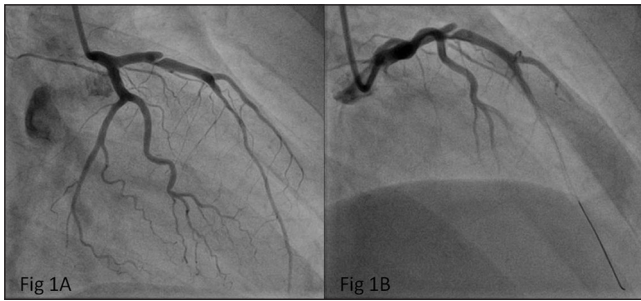


Figure 1: (a and b) Coronary angiogram showing dissection of the left anterior descending artery (LAD)

the patient underwent coronary angiogram that showed dissection of the LAD [Figure 1a and b]. Dissection was managed by putting a drug-eluting stent [Figure 2a and b]. Following the intervention in the LAD after head trauma, concern regarding dual antiplatelet exists. The patient is under monitoring with dual antiplatelets. After one year single antiplatelet drug is to be advised. Diagnosis of coronary dissection following chest trauma requires clinical suspicion and systematic evaluation.

CONCLUSION

Chest trauma following road traffic accident is common. Coronary dissection following chest trauma in this setting is a challenging situation. This case is being reported for its challenges in the management of the coronary dissection.

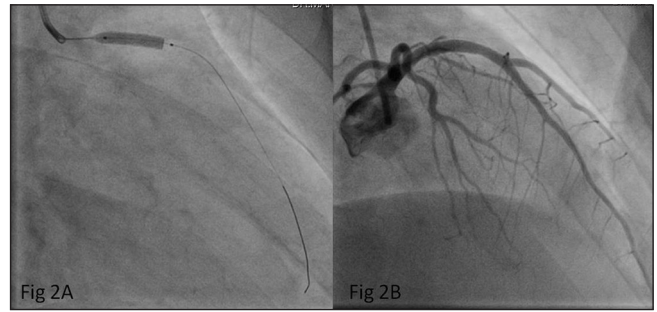


Figure 2: (a and b) Figure shows intervention of the coronary dissection of the left anterior descending artery (LAD)

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Conflicts of interest

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